

Amendments to the Abstract:

ABSTRACT OF THE DISCLOSURE

~~— A Ternary content addressable memory (TCAM) device contain an array differential TCAM cells and a column dummy differential TCAM to enable or disable each corresponding row TCAM cells to compare or not to compare with the input data. A method of sensing the logic state of match or mismatch through comparing the voltage difference of match line and dummy line are presented.~~

A dummy Content-addressable memory (CAM) cell and a dummy Ternary Content-addressable memory (TCAM) cell are connected to each row in a CAM and a ternary CAM array, respectively, to enable a differential match line sensing based on the content stored. The ternary content-addressable memory (TCAM) cell is for a differential match line sensing in low power applications. A method includes generating a voltage difference between match line signal and a reference line signal, and then detecting and amplifying the voltage difference to determine a match or a mismatch.